WHAT IS CLAIMED IS:

1. An *in vitro* method for screening modulators of NOS2 activity, the method comprising the steps of:

(i) providing p53 mutant cells that express NOS2;

(ii) contacting the cells with compounds suspected of having the ability to modulate NOS2 activity; and

(iii) detecting the level of NOS2 expression.

2. The method of claim 1, wherein the p53 mutant cells express recombinant NOS2.

3. The method of claim 1, wherein the p53 mutant cells produce about 2-15 nmole of nitrate plus nitrite per day.

4. The method of claim 1, wherein the p53 mutant cells express NOS2 having an activity from about 3 to about 25 pmole/min/mg.

5. The method of claim 1, wherein the p53 mutant cells are human carcinoma cells.

6. The method of claim 1, wherein the p53 mutant cells are selected from the group consisting of HT-29 cells, Calu-6 lung cells, and THLE-5B cells.

7. The method of claim 1, wherein the p53 mutant cells have a p53 null mutation, a p53 missense mutation, or a functionally inactive p53 protein complexed with SV40 large T antigen.

8. The method of claim 1, wherein the level of NOS2 expression is detected by determining the level of cGMP by ELISA or RIA.

9. The method of claim 1, wherein the level of NOS2 expression is detected by determining VEGF RNA or protein levels.

10. The method of claim 1, wherein the level of NOS2 expression is detected by determining nitrate plus nitrite production using a colorimetric assay.

11. An *in vivo* method for screening modulators of NOS2 activity, the method comprising the steps of:

(i) providing p53 mutant cells that express NOS2;

(ii) transplanting the cells into a immune deficient animal;

(iii) administering to the animal compounds suspected of having the ability to modulate NOS2 activity; and

(iv) measuring the growth rate or neovascularization of the tumor.

12. The method of claim 11, wherein the p53 mutant cells express recombinant NOS2.

13. The method of claim 11, wherein the p53 mutant cells produce about 2-15 nmole of nitrate plus nitrite per day.

14. The method of claim 11, wherein the p53 mutant cells express NOS2 having an activity from about 3 to about 25 pmole/min/mg.

15. The method of claim 11, wherein the p53 mutant cells are human carcinoma cells.

16. The method of claim 11, wherein the p53 mutant cells are selected from the group consisting of HT-29 cells, Calu-6 lung cells, and THLE-5B cells.

17. The method of claim 11, wherein the p53 mutant cells have a p53 null mutation, a p53 missense mutation, or a functionally inactive p53 protein complexed with SV40 large T antigen.

18. The method of claim 11, wherein the animal is an athymic nude mouse.

19. A method of predicting the benefit of administering NOS2 inhibitors to a cancer patient, the method comprising the step of:

determining the p53 status of the patient's cancer or tumor cells; whereby administration of an NOS2 inhibitor to the patient is beneficial when the cancer or tumor cells are p53 mutant cancer or tumor cells.

20. The method of claim 19, wherein the cancer is selected from the group consisting of breast, brain, head, neck, and colon cancer.

21. A method of treating cancer by administering NOS2 inhibitors to a patient, the method comprising the steps of:

(i) determining the p53 status of the patient's cancer or tumor cells;

(ii) administering an NOS2 inhibitor to the patient when the cancer or tumor cells are p53 mutant cancer or tumor cells.

22. The method of claim 21, wherein the cancer is selected from the group consisting of breast, brain, head, neck, and colon cancer.